

WR PATENT NEWS # 2007-46

PATENTS

US3027977 KNAUS 1962 TOOLS plumb bob DE DRGM 193259 SCHULTE 1904 PLUMB BOB

Theme: Mechanized plumb bob

One of the best mechanized plumb bobs is the relatively new plumb bob from LIONEL KNAUS.

The History and the invention:

3,027,977
TOOLS
Lionel KnauS, Worthington, Ohio, assignor to
Reed and KnauS, Inc.
Filed Aug. 7, 1959, Ser. No. 832,226
6 Claims. (Cl. 188—65.1)

The invention disclosed and claimed in this application relates to tools. It is illustrated by a carpenter's plumb bob useful in establishing vertical lines. Prior hereto, many plumb bobs of various kinds have been invented and patented. For instance, many plumb bobs have been patented in which there is provided a cord winding mechanism arranged therein whereby when the plumb bob is not in use, the cord is reeled or wound up within the body of the plumb bob. Most of these devices employ a spring in conjunction with the cord winding mechanism for actuating such mechanism and for winding up the cord when the plumb bob is not in use. Some of the patented arrangements provide a brake for preventing the undesired unwinding of the cord from the reel when the plumb bob is not in use and also when it is desired to suspend the plumb bob in operation.



A further object of the invention is the improvement in automatic plumb bobs so as to provide a bob wherein the supporting cord is connected to the weight in such manner that when not in use the cord may be automatically wound up within the bob and wherein any length of cord may be withdrawn and the bob clamped to the cord to restrain the operation of the winding up means until it is desired to release the same.

Further objects of my invention are to provide a plumb bob which is simple in construction and arrangement, strong, durable, efficient and convenient in its use, readily set up and comparatively inexpensive to manufacture.

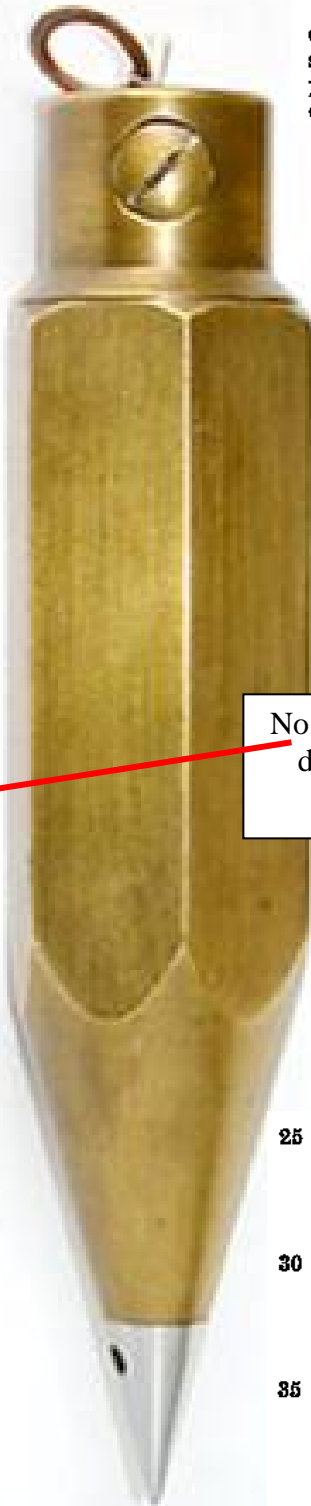
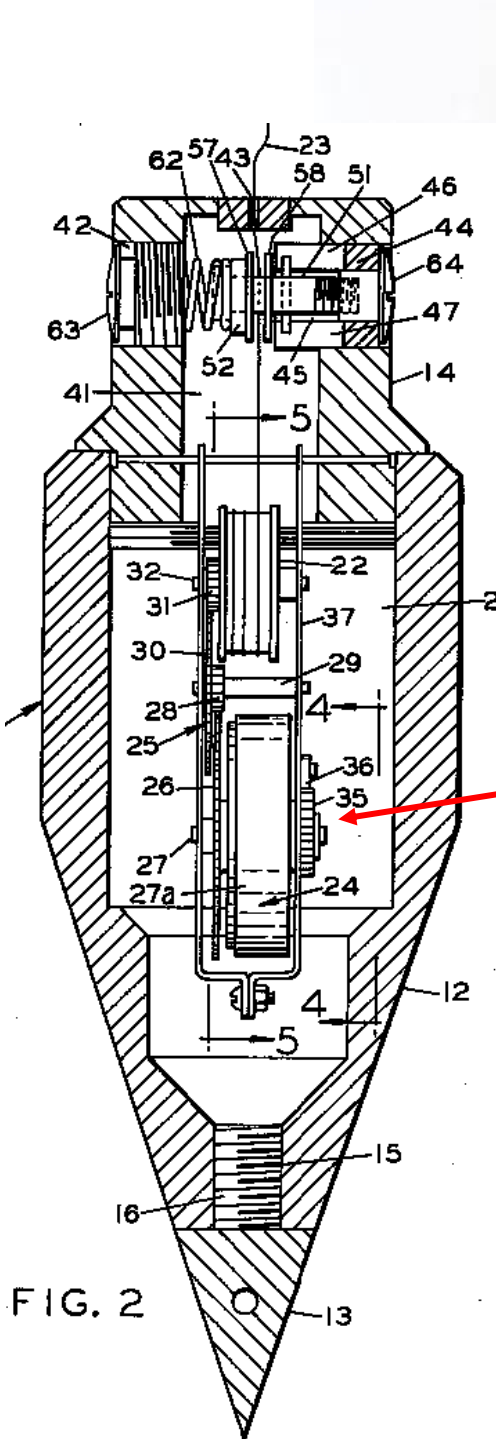
KNAUS in a DAVID STANLEY AUCTION.

A very rare, unused REED & KNAUS "Auto Bob" a 6" brass plumb bob with steel point which "automatically rewinds the string into the case and locks at any level" an ingenious manufactured plumb bob complete with orig. re-threading instructions and factory service guarantee whereby a charge of \$1.50 will include any repair and replacement of any damaged parts, in orig. box. N

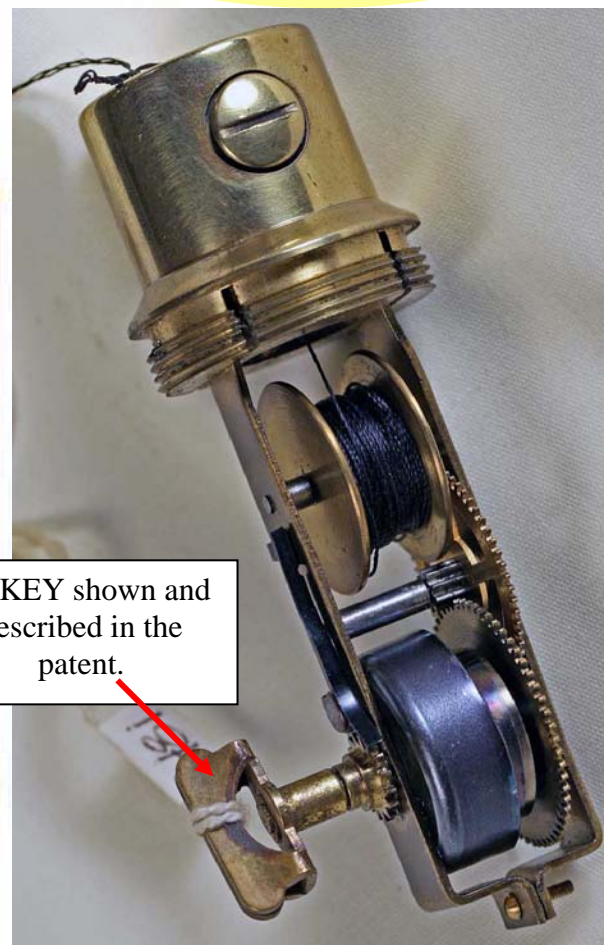
£469 Sale No. 46 24 Sept. 2005 Lot 563

United States Patent Office

3,027,977
Patented Apr. 3, 1962



A small internally threaded head 64 is threaded onto the threaded end 53 of pin 51 and serves as means by which the operator may push the plunger 51 in compressing the spring and relieving the clamping action on the cord 23.



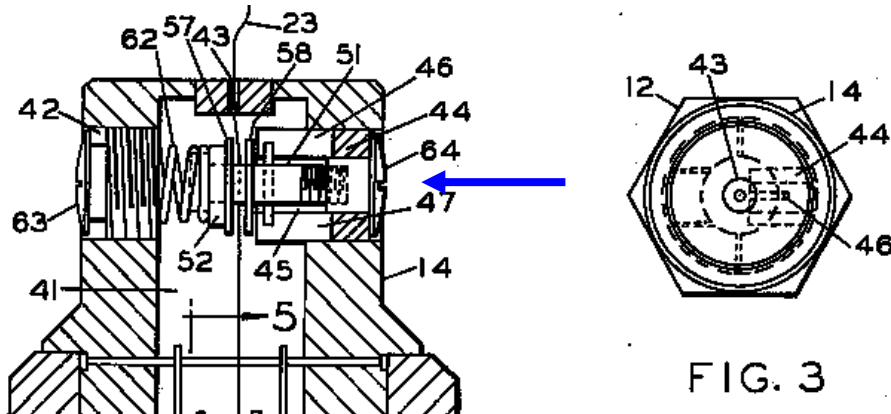
No KEY shown and described in the patent.

25 The main body 12 is hollow as at 21. Within the hollow 21 there is provided a reel 22 for the cord 23. There are also provided a spring unit 24, and a pinion and gear assembly generally designated 25, by which the spring unit 24 drives the reel 22 to wind up the cord 23 and by which tension is put upon the spring unit 24 as the reel 22 is turned in unwinding the cord 23. The drive 25 comprises a series of large and small gears or cogwheels. The large gear 26 is on the shaft 27 of the casing 27a and meshes with the smaller gear 28 on the shaft 29. Also on the shaft 29 is a large gear 30 which meshes with a smaller gear 31 on the shaft 32 of the reel 22. Thus a slight turning movement of the casing 27a of the spring unit 24 causes a relatively large number of turns of the reel 22 and winding up of the cord 23. When the cord 23 is let out it turns the reel 22 which in turn causes a relatively small movement of the casing 27a. The outer

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In the top we find the brake system:

FIG. 2 is a view in vertical section taken substantially on the line 2—2 of FIG. 1 the cord brake being shown in released position, and the showing being on an enlarged scale;



A further object is an improvement in the brake on the cord in a device of the character described which prevents the cord from being either unwound further, or wound up further, than the desired length for suspending the bob.

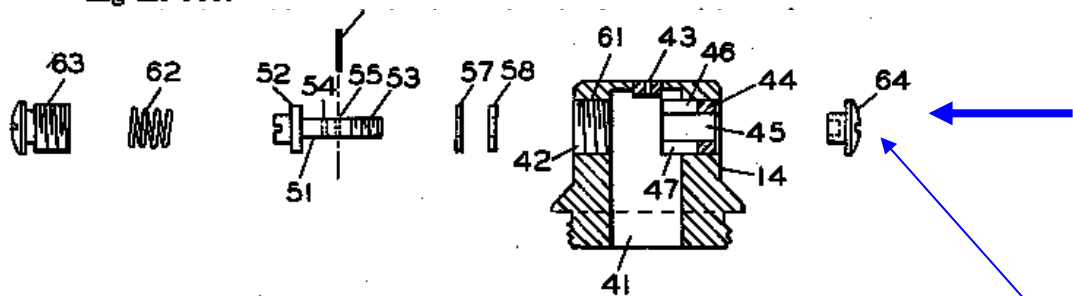


FIG. 6

43. On the pin 51 intermediate the head 52 and the small pin 56 are a pair of fiber washers 57 and 58. The washer 58 forms an abutment and the washer 57 forms a clamping means.

I have designed a special braking mechanism for releasably holding the cord in any desired position. This mechanism is illustrated best in FIGS. 2 and 6. Therein it may be seen that the cap 14 is also hollow, having a hollow 41. It also has a cross bore 42. In the upper face of the cap there is formed a central vertical opening 43. Through this opening 43 the cord 23 extends when the device is assembled as is shown in FIG. 2. Within the cross bore 42, at one end, there is permanently secured as by a press fit, a slotted sleeve 44. The sleeve 44 is formed with a concentric bore 45 and is provided with slots 46 and 47 for purposes later to be described.

When it is desired to use the plumb bob, pressure is exerted on the screw 64. Inasmuch as the screw 64 is secured to the pin 51 this moves the pin 51 inward (to the left in FIG. 2 acting through the head 52 to compress the spring 62 against screw 63. This allows the washers 57 and 58 to separate as shown in FIG. 2 and allows the cord 23 to be pulled out unwinding from reel 22 and through gear train 25 winding up the spring 33 to a greater tension. When the cord is extended to the desired point, pressure is released from the screw 64 which allows the spring 62 to move the pin 51 to the right (as shown in FIG. 2) so that the head 52 moves the washer 57 into contact with the washer 58 which cannot move to the right on account of its contact with the inner end of the sleeve 44. The two washers 57 and 58 clamp the cord 23 between them preventing the cord from unwinding further from the reel 22 or from being wound up to a greater extent by the spring unit 24. When the use is finished, the screw is again pressed and thereupon the spring unit 24 acts on the reel 22 to wind up the cord 23 again so that the cord does not become entangled with other tools.

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Nelson Denny wrote march 2007 about his KNAUS plumb bobs:

I have purchased two of these over the years.....the first I purchased at a Donnelly auction.....it is mint, in its original box with instructions, and includes a winding key. The second I bought from Ron Pearson, the fellow who wrote an article about it in the Chronical a few years back. It was used but in fine operating condition. I have since sold that one privately.

My total sightings of KNAUS examples also includes.....Bruce had another one, and another collector George Gaspari, from California had another.....if my memory serves me correct, I believe I saw another in a David Stanley auction within the last two years but never tracked the sale price..(remark: see page ...).None of these others had a winding key.....Incidentally, having a "key" is not essential to the bob functioning as intended; rather it is a convenience in re-stringing the bob, but not essential to be able to re-string it.....without it, you have to tension the coil drive spring, by rotating the gear mechanism by hand....tough on the fingers but possible to do. Whether there are 5 of these left or 100's, we may never know. They don't seem to appear that frequently so this is an item to take note of.



Have you tabulated this on your own "rarity index?"
...it cost much to much to manufacture and they were never produced in any great numbers.....Also, for such a heavy bob it has very limited reel space for the line (about 8 feet), and uses incredibly fine silk braided line to make it work properly.....I believe its usefulness was probably limited to surveyors.....a builder, for instance, would have limited use for such an instrument.

In the REFERENCES CITED we find not only patents of PLUMB BOBS, but also examples of a CARBRAKES (YASKIN), a BRAKE (JOHNSON) and a ROPE LOCK (CUTTING).

The Italian patent is not available.

References Cited in the file of this patent

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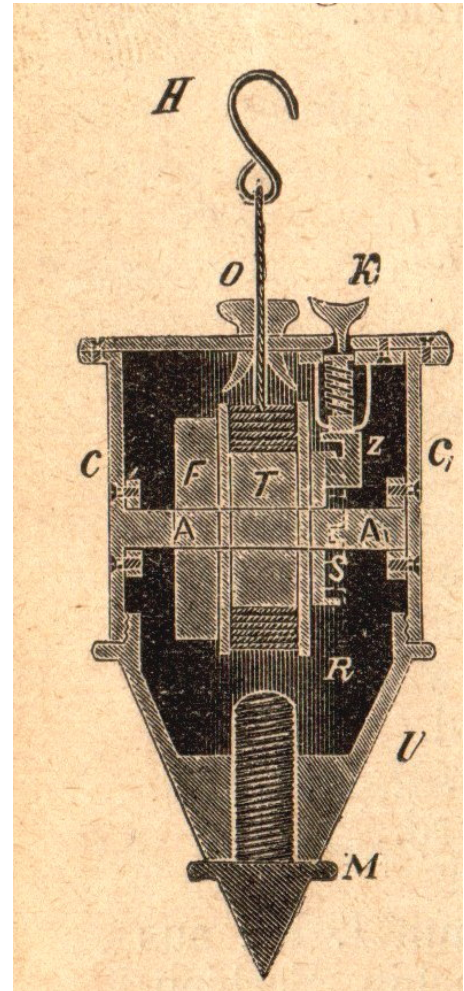
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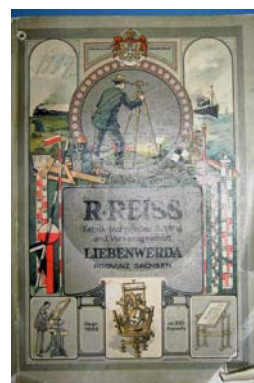
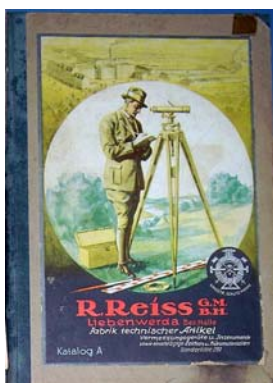
PATENT NEWS especially for PLUMB BOB COLLECTORS

Some years ago I got the chance to visit for half a day the archive of the ancient factory REISS in LIEBENWERD / Germany. I could search and make photos and copies of all the old catalogues. It was a very interesting visit. They were a leading producer and seller of surveying and measuring equipment up to 1945. Actually they are producing furniture for offices like desks, chairs etc.



In a German catalogue from the factory REISS LIEBENWERDA I found a drawing of an mechanized plumb bob. Unfortunately this is not a patented, but only a REGISTERED ARTICLE, so I could not get documents about it. ☹

I never saw this plumb bob in another catalogue or as a produced one.




The catalogues of this time had very nice covers.

PATENT NEWS especially for PLUMB BOB COLLECTORS

R. REISS, Fabrik technischer Artikel und Versandgeschäft, Liebenwerda.

Blitzlot.

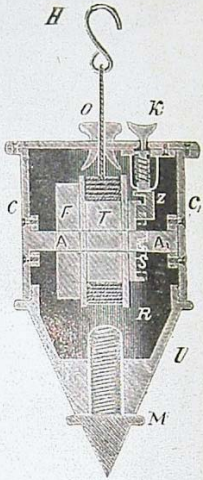
D. R. G. M. No. 193259.



U

Um mit überraschender Schnelligkeit und Leichtigkeit einen Punkt auf ein tiefer liegendes Niveau herabzuloten, ist von dem Herrn Markscheider Schulte ein Lot konstruiert worden, welches sich in jeder Höhenlage sofort feststellen lässt und das Aufwickeln der 3 m langen Schnur **selbsttätig** bewirkt. Zu diesem Zwecke besteht das Lot aus einem zylindrischen Gehäuse CC_1 , das mittels eines Zwischenstückes die ausschraubbare Spitze M trägt. Im Innern befindet sich auf einer festen Achse AA_1 die Schnurtrommel T drehbar, die ihrerseits an einer Seite mit dem Sperrrad S und an der anderen mit dem eine Spiralfeder einschliessenden Gehäuse F verbunden ist. Da die Enden dieser Spiralfeder an der festen Achse bzw. an der drehbaren Rolle befestigt sind, zeigt diese stets das Bestreben, die Schnurtrommel zu drehen, woran die Rolle jedoch durch eine Sperrklinke K gehindert wird, deren unteres Ende Z in die Zahnlücken des Sperrrades greift.

Spiralfeder an der festen Achse bzw. an der drehbaren Rolle befestigt sind, zeigt diese stets das Bestreben, die Schnurtrommel zu drehen, woran die Rolle jedoch durch eine Sperrklinke K gehindert wird, deren unteres Ende Z in die Zahnlücken des Sperrrades greift.



1907 it is presented alone and 1938 we see it on the same page with an US plumb bob with internal reel (like KEUFFEL & ESSER).

R. REISS, Fabrik technischer Artikel, LIEBENWERDA.

Feststellbare Lote neuester Konstruktion.



A

Nr. 6287. Neues Lot aus Messing mit Stahlspitze, Lotschnur innerhalb des Lotes. Der Gebrauch des Lotes ist sehr einfach; man braucht die Lotschnur nur in gewünschter Länge herauszuziehen und hängt das Lot dann sofort sicher fest. Durch Drehen in der Rechtsrichtung am Knopf A läßt sich nach Gebrauch die Lotschnur auf die innerhalb des Lotes angeordnete Haspel wickeln. Länge des Lotes ca. 9,5 cm, Gewicht ca. 300 gr
Preis Mk. 8.—

Nr. 3004. Blitzlot (D. R. G. M.) Konstruktion des Herrn Markscheider Schulte. Dieses Lot läßt sich in jeder Höhenlage sofort sicher feststellen und wird das Wiederaufrollen der Schnur selbsttätig durch Auslösung einer Feder mittels des Knopfes B bewirkt. Ausführung in Messing, mit verstellbarer Stahlspitze, Länge 12 cm, Gewicht ca. 500 gr
Preis Mk. 12.—



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Nr. 3004